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THREE ATTRACTIVE SLENDER PALMS FOR SOUTH FLORIDA

By

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TO MOST of us the coconut palm ranks as the finest of all the palm family. For it not only has grace and beauty but it carries the romance of the Pacific Islands with it wherever it goes.

There is however one slight objection to it. It is too large for the small plots of land with which we have surrounded our houses. Its roots do not, as do those of the Ficus trees, spread and take the nourishment from everything around them but a single coconut will spread its leaves out over a whole yard and monopolize it. This is perhaps our own fault. We have crowded too closely together here; have left too little room for gardens about our houses.

For the man with a small plot of ground there are many small slender graceful palms which have a charm about them that rivals and in some respects even excels that of the coconut as grown in a limited space beside the front door or in the back yard.

Three of these palms that have been recently brought into this region through the activities of the Division of Foreign Plant Exploration and Introduction in Washington have proved that they can grow well here and be very attractive additions to our small gardens.

Palms charm us by their form rather than by their color and those who demand colorful things about them may prefer to have their gardens filled with Acalyphas. To them, the charming, interesting palms described here may not appeal now but I predict that later they will see them in other people's gardens and covet them.

THE BONGA DE CHINA PALM (*Adonidia merrillii,* Beccari).

The first of these palms comes to us from the Philippine Islands and is the gift to our gardens of no less a person than the botanist after whom it is named, Dr. E. D. Merrill. It was named, furthermore, by one of the greatest of palm specialists; the Italian, Odoardo Beccari, who explored the wild jungles of Borneo and whose travels there are recounted in one of the most interesting books of exploration which I have ever read.

This palm was first brought to the notice of horticulturists by Dr. Merrill during his sojourn in Manila as botanist of the Bureau of Science. It was cultivated sparingly in the gardens of that city and had been incorrectly identified by the Spanish botanist, Sebastian Vidal who went to the Philippines in 1871 and who died there in 1889. His wife was an American lady, born in Philadelphia whom he met there while in charge of the Philippine exhibit at the Centennial Exhibition in 1876.

Observing that it was wrongly determined Dr. Merrill sent a specimen to Beccari, at that time the ranking palm specialist of the world, who had returned from his third expedition to New Guinea and settled in Florence where he later died. Beccari at once replied that the palm was misidentified and asked for more specimens, upon the receipt of which he named the palm *Normanbya merrillii* then believing it to belong to a genus of palms that had been first described by Ferdinand von Muller, in Australia. Later Beccari made a separate genus for it which he named after the mythical young prince of Cyprus, Adonis, famed for his great beauty. Dr. Merrill facetiously remarks in a recent letter regarding the name of this palm, "Did you realize that in the binomial *Adonidia merrillii* I am associated with the God of Beauty, one Adonis? There was already a genus of plants named Adonis and so Beccari derived the name from *Adonidis*, the genitive form for Adonis.—Adonidis, *Adonidia;* not that *I* am any howling beauty."

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Young Adonidia palm in fruit at Dr. E. L. Dow's exhibit, Palm Beach Flower show in March 1938 where it was one of the chief attractions, its scarlet fruits making a most beautiful show. Photograph, courtesy of A. P. Beach.

Two young Adonidia palms in the nursery of the Boynton Landscape Service at Boynton, Florida. One in the rear with its first cluster of red fruits. March 1938. Photo by A. P. Beach.

Palawan Island where the Adonidia Grows

Only on this island and islands of the Calamian group which together stretch from the Philippines to Borneo does this palm occur. Palawan is over 200 miles long and is composed partly of limestone and has three mountain peaks that rise from 5000 to 6800 feet high.

It is in the rocky crevices only on the limestone formations wherever there is soil enough, that this superb palm has grown for perhaps millions of years, nobody knows how long.

I am indebted to Dr. Merrill himself for this photograph and publish it here in order that hereafter whoever admires an *Adonidia merrillii* palm in someone's garden can have some idea of where it grew by looking at this photograph of the superb coastline of Palawan Island. Photograph supplied through the courtesy of the Bureau of Science, Manila, P. I.

So this beautiful palm is blessed with a name that ties it up to a famous Greek love affair between Venus and a beautiful prince of the island of Cyprus and to Dr. Merrill, the first American to study the plants of the Philippine Islands at the beginning of the century and to the Florentine botanist Beccari who, among other things, collected in the sixties 30,000 plant specimens in Borneo.

It was some years before the original habitat, the home so to say, of this lovely palm was discovered. According to Merrill: "It occurs in great abundance in the characteristic high limestone islands (of the Philippines) in the Calamianes-Palawan areas and only on limestone; Peñon de Coron, the similar islands just east of Malampaya Bay in Palawan; those in Taytay Bay, Northern Palawan and further south on the south side of Palawan; always, however, on these characteristic limestone islands and nowhere else. This explains why it is so entirely at home in Florida, for it will grow only on lime soil. I understand that it could not be successfully grown in Singapore because of the red clay soil: In Manila it thrives because the soil is filled with lime from shell deposits, etc. On Coron Island it is very striking; the palms occurring all the way from the base to the summit crests. There are literally tens of thousands of the plants on these limestone islands."

So this superb palm comes to us with a lot of romance attached to it. Romance in which are enmeshed the lives of interesting scientists scattered over the world, the geography of some limestone islands of the Philippine Archipelago, and its cultivation in the dooryard gardens of this great garden-loving American community in South Florida. To this story let me add the fact that the first sending of seeds of this palm to America was made in 1913 by the tropical agriculturist, O. W. Barrett, when he was chief of the Division of Horticulture of the Bureau of Agriculture in Manila. It is recorded in the S. P. 1. Inventories as 34732. Barrett's name is associated also, in the minds of those of us who know him well, with the introduction of the Dasheen to which he took a great fancy while in the island of Puerto Rico.

I am aware that many of my readers will skip over the above details about the Adonidia. To those, however, who do not surround themselves with living "plant growths," which they get from a nurseryman but are curious to know from whence come the beautiful plants that delight them with their charming personalities when they brush against them in the early mornings, this brief history of the coming of Dr. Merrill's palm may add something of romance.

Adonidia merrillii is a dainty feather-palm with graceful, curved, pinnate leaves. Its slender trunk, ringed with leaf scars, rises fifteen to twenty feet in the air and does not get thicker than a foot at its base. The palm is spineless throughout.

The leaves are six feet or so long, inclined to be glaucous, divided (bifid) at their ends, have a single midrib but with prominent nerves running along the leaf margins. The leaflets have a characteristic twist to them which gives to the whole leaf a trough-like appearance when viewed from the end of the leaf. The palm is monoecious, that is, it has male and female flowers that are separate although borne on the same flower cluster. They are arranged in threes, a pistillate standing between two staminate flowers. This flower cluster is borne below the leaves at the top of the trunk. It is of a straw yellow color, short and compact in form, with many branches, and when the bunches of fruits ripen they are a strikingly beautiful sight for the fruits are nearly two inches long, oval in shape, and of a superb bright red color. Each fruit contains a single seed and has but little fruit flesh and although the fruit looks good enough to eat it is inedible. The seed has what is termed ruminate albumen; that is, when cut in two, it presents a mottled look like the interior of a nutmeg.

Altogether, this palm from the Philippines is destined I believe to take a prominent place in our dooryard gardens where it will fill them with a charm that too many of them still need. It is twenty-five years since it was first introduced and it is high time that it be known to a very wide circle of amateurs. A specimen in fruit at the Palm Beach flower show this March, exhibited by Dr. E. L. Dow, quite stole the show. How rapidly the nurseries of the State can get the seeds for its propagation is a matter that time alone can decide.

THE MAYA PALM (*Opsiandra Maya,* Cook).

FIFTEEN years ago my old friend Dr. O. F. Cook made a difficult trip into the wilds of Petén, one of the least-known parts of Guate-

mala. This is where the chicle gatherers of the chewing gum companies collect the latex of the Sapodilla trees.

Today dense forests and scrub have overgrown the monuments of the Mayas' vanished civilization. It was not far from one of their ancient monuments, erected with so much taste and sense of proportion, that he saw a strange and remarkable palm. Being familiar with the aspects of palms, having studied them for years, even having given to the Royal Palm its permanent botanical name of *Roystonea*, Dr. Cook's eye was attracted by this single lone palm. It was standing near a place called Laguna Colorada in the district of Tikál, one of the centers of the early Maya civilization. He and his assistant, R. D. Martin, collected specimens and photographed it. A few days later he saw what appeared to be the same species near Uaxactun but having a larger flower cluster with more numerous branches. This was in fruit and he collected and brought to Washington in March 1922 a quantity of its peculiar transverse kidney-shaped seeds.

Cook often talked of his interesting journey to Petén and of the new palm he had found there. The seeds grew well in the greenhouse in Washington and in 1923 he turned over a stock of small plants to the Office of Foreign Seed and Plant Introduction and they were numbered 57681. A number of these, his pet palms, were sent down to the Chapman Field Garden and Cook superintended their planting among the ruin-like walled enclosures which had been built there to protect his experimental rubber plantings. He presented me with one of these Maya palms and I planted it in the corner of my terrace in "The Kampong," giving it the best place I had.

Ten years have passed and it has grown into a handsome feather-palm about fifteen feet high and its graceful plume-like fronds throw their shadows on the awning of our dining room. When the palm was about five years old, to my delight, it began developing under the base (the sheath) of its lowest leaf, a flat spathe the size of my hand. After the leaf had fallen and this bright green spathe was revealed, there grew very slowly out of it a strange dark green flower cluster eighteen inches long. Later other spathes appeared, one under each leaf sheath, and every one of them produced a flower cluster. Each cluster bristled with short, stiff, slender branches upon which were protuberances that looked like the beginnings of flower buds, only they showed no tendency to burst into bloom but remained, as it were, perfectly dormant. In the autumn when I returned from the North I examined them and found practically no change except, perhaps, for a slight enlargement of the curious protuberances. For four years these flower buds remained dormant and then, in the spring of 1937, they slowly opened. They were not in the least showy flowers and it took my hand lens to tell which of the little things were male, having stamens yellow with pollen, and which were pistillate only. The flowers of both sexes were mingled together.

I announced the flowering to Cook, for it was the first time that his Maya palm had flowered in captivity, and he seemed as excited about it as was Julian Huxley, Director of the London Zoo, when his manatee became "heavy with child." Cook had named his palm *Opsiandra* to denote one of its striking characteristics, which is that the male flowers persist for months on the inflorescences even after the female flowers there have developed into fruits. It appears to be not uncommon for the female flowers of some palms to develop after the male ones have withered but this striking difference of male flowers persisting after the females have developed into fruits struck Cook as worthy of emphasis in his generic name of the Maya palm.

This is not the place to go into much botanical detail since all of this can be found in Cook's original article in the Journal of Washington Academy of Science.*

The palm on the terrace after bursting open its flower buds began to show evidences that the pistils of its female flowers had been fertilized by pollen from the male flowers. Like the majority of palms its female flowers are fertile to the pollen from its own flowers. The date palm and certain other genera have their male and female flowers on different individual trees.

The young fruits as they grew were of a brilliant, almost ivory white color and they had a gloss that made them very attractive. Slowly as they reached maturity the color changed to pink and then to a pretty red with freckle-like dots over them.

* Cook, O. F. Opsiandra, a new genus of palms growing on Maya ruins in Petén, Journal of Washington Academy of Science, 13: 179-184 n. 9 May 4, 1923.

The Maya Palm (*Opsiandra maya,* Cook)

The first specimen of this species to fruit in the United States. Grown from seed collected near the Maya ruins of Uaxactun, Guatemala in March 1922. Only three flower clusters are bearing fruit. These are four years old. The others are younger. A very desirable small palm for dooryard gardens. Photograph taken in "The Kampong," Coconut Grove, Florida 1937.

The discoverer of the Maya palm, Dr. O. F. Cook, examining five of his palms grown from seed collected in March 1922 near Uaxactun, Guatemala. They are fifteen years old and have sent out their first flower clusters but the blooms have not yet opened. Shaded by stone walls they show their suitability for small gardens or dooryards in Florida. Photograph taken in Chapman Field Plant Introduction Garden, 1937.

When fully ripe they were a scant ¾ of an inch through. I tasted the soft sweetish pulp which covered their curious transversely kidney-shaped seeds and found it palatable but with nothing very distinctive about it. The birds tried them, I noticed, and passed them up as not to their taste. So I left them hanging all summer. Cook came to see and measure them and when they began to dry up and shrivel Mr. Harold Loomis took them and planted some of them in flats at Chapman Field. Others were planted at Colonel Montgomery's Palmetum where they are now growing. From the Fairchild Tropical Gardens and these other gardens they will be distributed to the private gardens of this region.

Several clusters of fruit have now ripened on my terrace tree but there are a dozen more dark green fruiting branches still standing out stiffly like hands with opened fingers waiting for the months, even years, to pass until they shall be ready for the great event, the moment of fertilization which starts a new generation. Four years for a flower bud to open? It seems to us humans a long time but we should never forget that these

A flower cluster of the Maya palm opening the small blooms which have taken four years to mature. This cluster first formed in 1933 but stood dormant on the trunk of the palm until June 1937. From these flowers were formed the first fruits of this palm to ripen in the United States of America. "The Kampong," Coconut Grove, Florida.

palms have come down to us, tumbling generation after generation, from the days when the world was completely surrounded by a great mantle of clouds and its climate was so warm that tropical palms grew on the banks of the Thames River. The double coconut is an even slower-moving organism for its fruits take ten years from the moment of fertilization to the moment when they are ripe and will grow.

I am thrilled whenever I think of the romance of this palm. Doubtless seen, and perhaps planted, by the great artists who built the marvelous temples of that vanished Maya civilization, it comes to us as a gift from my old friend and colleague, O. F. Cook, who has spent so many years of his life among the palms of the world and whose sharp eyes discovered it among the ruins. That it should have been my good fortune to have it open its strange blooms for the first time on our terrace in "The Kampong" in this new region where a host of cultured people will be able to grow it, prejudices me strongly in its favor.

It is a safe prediction that it will prove itself well adapted to conditions here in Florida. How much cold it will endure we do not yet know. It is a forest palm but not one of those requiring shade; not an undergrowth palm. Its slender trunk is supported on a conical mass of thick roots and is seldom more than six inches through

Three fruit clusters of the Maya palm (*Opsiandra maya,* Cook). The cluster attached behind the trunk has ripe fruits on it of a dull red color and covered with small darker spots. The other clusters have ivory white fruits that are immature. These fruits have taken four years to form after the flower cluster first appeared. From the Maya ruins of Guatemala. Photograph by D. F. on "The Kampong," Coconut Grove, Fla.

even when its height reaches 60 feet or more. Its leaves, according to Cook, are 8 to 9 feet long but generally few in number with 10 pinnae on each side of the midrib.

It belongs in the class of the *Synecanthaceae* which includes only three other genera: *Synecanthus* in Guatemala; *Gaussia* in Cuba; and *Aeria* in Puerto Rico. According to Cook it differs from *Aeria* which has 7 spathes enclosing the stem of the inflorescence and from *Gaussia* which has only 2 spathes, in having four of them. A question for the botanists to settle has arisen from the fact that the spathes on the palms on my terrace and at Chapman Field count five and not four. Whether this is of specific importance or whether the palm from which Cook got these seeds is different from the one he first saw at Laguna Colorada are matters which will seem of considerable moment to botanists but weigh lightly upon the householders who will in the future have the good luck to grow the Maya palm in their dooryards here in Florida and perhaps elsewhere in the tropical gardens of the world.

THE PACAYA PALM. (*Chamaedorea pacaya*, Oersted).

IN NEARLY every garden in the town of Cobán, a city of 22,000 inhabitants in the republic of Guatemala, are to be seen a number of small attractive feather-palms. These are grown, not for their beauty but for the edible flower clusters that they bear throughout the year.

This was the information that came to me first from the letters of Wilson Popenoe who in 1916 was our agricultural explorer in the highlands of Guatemala where he had gone after avocado varieties. A photograph he took of these palms, which we reproduced in the "Plant Immigrants" of June 1917, has never quite faded from my memory, for the idea of growing a palm for its edible flower clusters made a peculiar appeal to me. I had eaten many palm salads made from the terminal buds of great Royal palms in spite of the fact that I rather shrank from the idea of the destruction of so noble a work of nature for so trivial a purpose as the tickling of my palate for a few moments. But to eat only the flower clusters was another matter.

I asked many questions about this so-called Pacaya palm of the gardens of the Guatemaltecans, which botanically is *Chamaedorea pacaya,* and found that it really is a garden vegetable in as true a sense as is the sweet corn of which we are so fond.

A male Pacaya Palm (*Chamaedorea pacaya*, Oersted) as it is growing in half shade in "The Kampong." Its flower clusters looking like ears of corn are arranged around the stem. They are ready to be gathered and cooked.

There is this difference between them however: we Americans have learned to eat corn (I say "we," for Europeans have not yet learned to like corn and ridicule our barbaric methods of eating it off the cob); but the pacaya few of us have ever even heard of. There are other fundamental differences, of course. The corn is a giant grass and the pacaya is a palm. However, they both come to us out of the dim unwritten past of those highly civilized people, the Mayas, to whom we owe so many of our cultivated crops. Like the Incas, they had their geniuses who were such domesticators of plants as few other nationalities of the world have possessed. And these plant geniuses seem to have been able to convert the people to their way of thinking that the flavors of the plants they domesticated were palatable.

In any case, in the Alta Vera Paz and the southern part of Guatemala as well, this little palm

of which I am speaking is grown beneath the shade of avocado and coffee trees. Its unopened spathes form no inconsiderable part of the diet of a remarkable people which had come to use the avocado, centuries before Columbus landed on San Salvador.

Wilson Popenoe has given us a clear picture of this pretty little slender palm. It only grows about fifteen feet tall and has a stem that is seldom more than two inches through and stands on short thick stilt-like roots. Its feathery leaves are only two and a half feet long, as delicate as those of the common cluster palm *Chrysalidocarpus,* and of a rich green color. It does not sucker at the base but remains an erect, slender palm, ideal for the dooryard or the patio. The fronds as they fall leave distinct rings or scars but the stem holds its dark green color for years.

Arranged around the stem some distance below the leaves there appear, in Florida every spring and in Guatemala apparently at almost any time of year, a cluster of green spathes reminding one of ears of corn, though they are smaller, of a deeper green and are drawn out into sharp points. If you do not cut off these spathes they will open of their own accord and there will come tumbling out of them an amazing cascade of golden yellow stems—the inflorescence. These long slender hanging stems are covered with little protuberances which if they happen to be of the male variety will open and shed quantities of pollen when they are ripe and the wind shakes them.

Before the spathes have reached the stage when they open they are gathered by the Guatemaltecan cooks and with a sharp knife opened up and robbed of their contents which look like straw colored strings all neatly wrapped around a central stem. This pretty mass of delicate vegetable substance looks certainly as edible as anything one could wish to see.

In Guatemala, according to Popenoe, the cooks make fritters of it by dipping it in a batter of eggs and then frying it; or folding it in an omelette, or boiling it and serving it like cauliflower, or mixing it with other vegetables in a salad. When very young and tender its flavor is agreeable but if left too long, until the inflorescence is nearly ready to emerge from the spathe, it has a strongly bitter taste.

Near view of the edible flower clusters of the Pacaya palm mature enough to cook.

Since the pacaya palm grows in a variety of soils and appears to stand considerable quantities of lime, and because of its success at 5,000 feet altitude, Popenoe predicted that it would prove hardy in California and in Florida although he did not know what effect the sandy soils of Florida might have upon it. He gave the selling price of the bundles of spathes that he saw for sale on the markets, remarking that this was high according to local standards which showed that the vegetable was held in high esteem.

But all that he wrote was over twenty years ago and although he sent in seeds of the Pacaya palm at that time and it was given the S. P. I. number of 44059 in the Inventories, I doubt if there is more than one person in America today who has any of this palm growing, or having it has ever tried to cook and eat its inflorescence.

This brings me to my own little contribution to this account of the Pacaya palm.

A Pacaya Palm in Flower

Six unopened flower clusters still enclosed in their dark green spathes and one cluster that has opened showing the long yellow branches of the inflorescence. The unopened flower cluster makes a delicate vegetable much used in Guatemala and worthy of growing in Florida. This is a male palm. "The Kampong," Coconut Grove, Fla.

Some years ago I received two of these Pacaya palms from the Chapman Field Garden and considering them as shade loving species I planted them under my Mahogany tree near the kitchen door here on "The Kampong." In the beginning they had a hard time: all sorts of accidents happened to them and they grew slowly. It was several years before there was any sign of a spathe appearing on the trunks. Last year some small flower clusters appeared but they had opened before I thought to try them in the kitchen. This season, however, I cooked them in my own way by parboiling them and throwing off two changes of water and then letting them simmer in a little butter as one does asparagus or cauliflower. Whereas when raw they were quite bitter and after one change of water had still a trace of bitterness, after two changes of water and a few minutes cooking in a saucepan with melted butter not the least trace of bitterness remained. They were as fiberless and delicate as cauliflower and had a distinctive flavor that was not like anything I ever ate before. Without exaggeration they could be called delicious.

This is the present status of the pacaya palm here in Florida. In California I do not learn that anything more definite has been done with it. I once saw a number of pacaya palms there grown under slat house protection but whether these have survived and if they were transferred to the out of doors I do not know.

I cannot claim that these results are very convincing and I know many of my friends will say that cauliflower is good enough for them but when a beautiful little palm grows charmingly in my back yard and yields a delicious vegetable that is eaten by many thousands of people who have shown by their liking for the avocado that they know good foods, I cannot so lightly throw off the responsibility of trying to establish it as an addition to our door-yard plants. In the years to come it may appeal to a growing number of the true gourmets who crave variety and who are willing to wait for such a delicate titbit as the inflorescence of the Pacaya palm.

In order to help anyone who should happen to possess a small palm and wonder if it is the Pacaya, let me give here a short description of the species as it is known to botanists. In the first place it should be noted that this is only one species of a genus having more than 60 species and that these are somewhat mixed in their classification.

They inhabit the mountains of Central America and extend through into central Mexico. From Mexico southward they are scattered down the great Andean chain of mountains into western Brazil and along the little known eastern slopes of the Andes of Peru and Bolivia. We may expect many other of these Chamaedoreas to find a congenial home here in South Florida.

This species, *C. pacaya*, is distinctly a small palm, seldom attaining more than fifteen feet. Numerous short stilt-like roots support the trunk at the ground. Its crown of leaves is scanty and they are of the feather type; 14 to 15 pinnae or leaflets an inch or so wide attached to the midrib by broad bases which are sometimes a half-inch wide. Each leaflet is sword shaped and sharply pointed and has from 5 to 8 prominent veins running lengthwise through it which give it a plicate or folded appearance. The texture of the leaflet is papery, its edges are not toothed, and it is thin and dull dark green in color. The spindle shaped flower cluster, of which there may be half a dozen, is closely wrapped in four enclosing spathes. It is from one to one and a half feet long and comes to a sharp point. The palm being dioecious, that is, having male and female flowers on different individuals (like the date palm) does not fruit unless cross pollinated either by hand or by insects. When the spathes open, which on "The Kampong" is in March and April, the light yellow flower cluster falls down in a limp mass a foot or more long and four inches through. The male cluster is composed of fifty or more branches three to seven inches long and a quarter of an inch through, all attached up and down the central stem and all as limp as strings of yellow twine. They are set thick with flowers. As is the case with many palm flowers, those of the pacaya are composed of three scale-like petals which open like valves, disclosing six short plump stamens on very short filaments. In the male flowers the stamens are full of pollen and the pistil abortive, whereas in the female flowers the stamens are abortive, often having no anthers at all, but with a well developed pistil in the center.

I have found this delicate palm rather intolerant of afternoon sunlight and although able to withstand considerable drouth it does much better if kept well watered. It is essentially a dooryard palm.